

Appl. No. 09/581,485  
Amdt. dated May 12, 2004  
Reply to Office action of Dec. 31, 2003

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended) A method of stabilizing a clayey geological formation surrounding a hydrocarbon oil well comprising the steps of:

injecting from a surface reservoir an aqueous fluid comprising a first and a second reactant, wherein the first reactant is a ~~diamine or a polyhydric alcohol glycol~~ and the second reactant comprises at least one carbonyl group;

letting said fluid contact said clayey formation;

allowing intercalation of said first and second reactant into clay galleries of said clayey geological formation; and

stabilizing said formation by using a reaction between said first and said second reactant, wherein said reaction comprises an *in situ* polymerization taking place in the presence of clay, within said clay galleries, to maintain the integrity of said hydrocarbon oil well.

Claim 2 (previously presented) The method of claim 1, wherein the reaction comprises a condensation stabilization with or without pH adjustment.

Claim 3 (canceled)

Claim 4 (canceled)

Claim 5 (original) A method of drilling a wellbore into a potentially hydrocarbon bearing formation comprising the steps of drilling part of said wellbore through a clayey

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formation and using a method in accordance with claim 1 to stabilize said formation.

Claim 6 (previously presented) The method of claim 1, wherein the reaction comprises a stabilization through epoxide ring opening under neutral or acidic conditions.

Claim 7 (canceled)

Claim 8 (canceled)

Claim 9 (canceled)

Claim 10 (previously presented) The method of claim 1, wherein a reaction product of said reaction is intercalated in the clay galleries.

Claim 11 (new) A method of stabilizing a clayey geological formation surrounding a hydrocarbon oil well comprising the steps of:

injecting from a surface reservoir an aqueous fluid comprising a first and a second reactant, wherein the first reactant is a diamine or a polyhydric alcohol, wherein the reaction comprises a stabilization through epoxide ring opening under neutral or acidic conditions;

letting said fluid contact said clayey formation;

allowing intercalation of said first and second reactant into clay galleries of said clayey geological formation; and

stabilizing said formation by using a reaction between said first and said second reactant, wherein said reaction comprises an *in situ* polymerization taking place in the presence of clay, within said clay galleries, to maintain the integrity of said hydrocarbon oil well.